

WHAT IS CLAIMED IS:

1. Liquid heating apparatus comprising:

5 a tank adapted to store therein a quantity of liquid to be heated,
said tank having a plurality of contiguous vertical zones of unequal
volumes; and

 a vertically spaced plurality of unequal wattage electrical heating
structures extending into said tank, each electrical heating structure
10 serving a different one of said zones, said electrical heating structures
providing said zones with substantially equal heating wattage densities.

2. The liquid heating apparatus of Claim 1 wherein:

 said liquid heating apparatus is an electric water heater.

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3. The liquid heating apparatus of Claim 1 wherein:

 said electric heating structures are individually controlled.

4. The liquid heating apparatus of Claim 1 wherein:

20 each of said electrical heating structures is an individual electrical
resistance type immersion heating element.

5. The liquid heating apparatus of Claim 1 wherein:

said zones comprise a top zone contiguous with a bottom zone and having a volume smaller than the volume of said bottom zone, and

said electrical heating structures comprise a top electrical heating
5 structure serving said top zone and having a first wattage, and a bottom
electrical heating structure serving said bottom zone and having a second
wattage, the ratio of said first wattage to said second wattage being
substantially identical to the ratio of the volume of said top zone to the
volume of said bottom zone.

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6. The liquid heating apparatus of Claim 1 wherein:

said zones comprise a top zone contiguous with a bottom zone and having a volume larger than the volume of said bottom zone, and

said electrical heating structures comprise a top electrical heating
15 structure serving said top zone and having a first wattage, and a bottom
electrical heating structure serving said bottom zone and having a second
wattage, the ratio of said first wattage to said second wattage being
substantially identical to the ratio of the volume of said top zone to the
volume of said bottom zone.

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7. The liquid heating apparatus of Claim 1 wherein:

said tank has at least three contiguous vertical zones of unequal
volumes each being served by a different one of said electrical heating
structures.

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8. An electric water heater comprising:

a tank adapted to store therein a quantity of water to be heated,
said tank having a plurality of contiguous vertical zones of unequal
volumes;

5 an insulating jacket structure surrounding said tank; and

a vertically spaced apart plurality of unequal wattage electrical
heating structures horizontally projecting into the interior of said tank,
each of said electrical heating structures extending along a bottom
portion of and serving a different one of said zones, said electrical heating
10 structures being sized to provide said zones with substantially equal
heating wattage densities.

9. The electric water heater of Claim 8 wherein:

said electrical heating structures are individually controlled.

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10. The electric water heater of Claim 8 wherein:

each of said electrical heating structures is an individual electrical
resistance type immersion heating element.

20 11. The electric water heater of Claim 8 wherein:

said zones comprise a top zone contiguous with a bottom zone and
having a volume smaller than the volume of said bottom zone, and

said electrical heating structures comprise a top electrical heating
structure serving said top zone and having a first wattage, and a bottom
25 electrical heating structure serving said bottom zone and having a second
wattage, the ratio of said first wattage to said second wattage being
substantially identical to the ratio of the volume of said top zone to the
volume of said bottom zone.

12. The electric water heater of Claim 8 wherein:

said zones comprise a top zone contiguous with a bottom zone and having a volume larger than the volume of said bottom zone, and

5 said electrical heating structures comprise a top electrical heating structure serving said top zone and having a first wattage, and a bottom electrical heating structure serving said bottom zone and having a second wattage, the ratio of said first wattage to said second wattage being substantially identical to the ratio of the volume of said top zone to the
10 volume of said bottom zone.

13. The electric water heater of Claim 8 wherein:

said tank has at least three contiguous vertical zones of unequal volumes each being served by a different one of said electrical heating
15 structures.

14. An electric water heater comprising a water storage tank having unequal volume interior zones respectively served by spaced apart unequal wattage electrical heating structures extending into the interior of the tank and providing said zones with substantially equal heating
5 wattage densities.

15. The electric water heater of Claim 14 wherein:
said unequal volume interior zones are contiguous vertical zones,
and
10 said unequal wattage electrical heating structures extend horizontally into the interior of said tank.